RTJones Proposal
(Cover Page)

RTJones Proposer Information
FA Project:
Name:
Address:
Center Affiliation:
Email:
Phone:
API Concurrence (name & email):

Proposal
Title of Investigation:
Continuing Project: [yes or no]
If Continuing Project, provide GID:
Indicate the Classification of Data based upon NASA's Risk Assessment Criteria
Check all that apply. Please note that NAS systems are only authorized to support data classes Low and Moderate. See note (4) in instructions.
[ ] Low [ ] Moderate [ ] High
[ ] Export Control [ ] ITAR [ ] Proprietary [ ] SBU
[ ] Other sensitive data: _____(explain)

Indicate level of disaster recovery needed if NAS is unavailable:
[ ] Immediate [ ] 2-3 days [ ] 2-4 weeks [ ] 2-6 months [ ] None

Resources Requested

Total Annual CPU Hours requested:	Memory/CPU required:
Avg/Max CPUs per job:	Memory/Job required:
Avg/Max wall time per job:	Storage required:

Code Description:
Numerical Scheme:
Programming paradigm:
Scalability:
Est. Start/Stop Dates:
Special Software Needs:
Special Assistance Required:

Technical Description

Description of Technical Work: (include why RTJones is needed or preferred over other systems)

FA Project Milestone (include date):

Significance of proposal to milestone:

Instructions for Requesting Time on the Fundamental Aeronautics Program's
RTJones SGI ICE Cluster

The Fundamental Aeronautics Program (FAP) expanded its computational resources with the addition of an SGI ICE system (RTJones) to the resources at the NASA Advanced Super Computing Division at NASA Ames Research Center. RTJones was installed in 2007 and is used exclusively by users of the Aeronautics Mission Directorate. Information about the RTJones system may be found at:

http://www.nas.nasa.gov/Users/Documentation/Ice/ice.html
http://www.nas.nasa.gov/Users/Documentation/Ice/runningjobs.html

The purpose of this cluster is to enable high-performance computing in support of the long-term FAP goals. Highest-priority use will include: critical computing needs for FAP; multi-disciplinary activities that cannot be accomplished elsewhere; and ensuring the timeliness of job execution for research to proceed at a reasonable pace in all FAP projects. Capability computing efforts include those within FAP to develop new advanced capabilities that FAP has previously initiated or those that fall within the bounds of out-year FAP Goals. RTJones is intended to serve the FAP projects as a resource for exploration of new methods – potentially new approaches to computational solutions in aeronautics technology development. Multi-disciplinary activities include efforts aimed at simultaneous high-fidelity analysis—coupling a number of disciplines.

Proposal Instructions

- Proposal information should not exceed one page, not including the cover page.
- The RTJones proposer is responsible for obtaining Associate Principal Investigator (API) concurrence—required prior to proposal submission—include name and contact information—no signature is required.
- Include title and date of the specific, direct Project Milestone that is being supported by the work under this proposal.
- Include a brief explanation of how the work being performed under this proposal will contribute to achieving the milestone and/or further the long-term goals of FAP.
- Description of technical work: Include major technical challenges addressed by the proposal; approach to be used; and expected advancement resulting from the work. Identify briefly why RTJones is the preferred machine. Explain why the proposal is a new capability or one supporting FAP long-term goals.
- The RTJones proposer will be responsible for establishing their accounts and those of any other users under their proposals, once their proposals are approved.
- All proposals must be submitted electronically to: rtjreqst@nas.nasa.gov. File names should begin with associated Project followed by a unique identifier selected by the RTJones proposer (HYP, SUP, SFW, SRW) e.g. SRW.xxxx.####. doc
- Proposal Categories:
    - Those directly supporting a milestone for FAP
    - Those supporting a binding FAP obligation–e.g. ,contracts, NRAs, grants, MOAs, etc.
    - Code development and/or long-term FAP goals.

- Non-FAP users (e.g., support efforts for other Mission Directorates, Government Agencies, academia or industry which do not directly support a goal for FAP,but due to the technical challenge, require use of RTJones.) See note #1 below.

Selection Basis—proposals will be selected for their unique contribution to achieving current FAP milestones; supporting FAP long-term goals; or providing new capabilities that make best use of the features of RTJones. Proposals should identify specifically why RTJones is the needed or preferred machine and how the proposal will contribute to FAP milestones and/or long-term goals. Proposal sectors to be considered include, but are not limited to, the following:

- Computing Needs for FAP
  a. Computational resources needed in order to complete milestones for program and cannot be run on a smaller machine in a reasonable amount of time.
  b. Support of FAP goals.
- Capability Computing
  a. Developing new technology that requires or takes advantage of new HPC hardware especially distributed multiple-core processor architectures.
- Multi-disciplinary
  a. High fidelity analysis coupling multiple disciplines.
- Relevance to the
  a. Timely completion of the referenced milestone
  b. Development of new predictive methods which take advantage of the RTJones architecture
  c. High fidelity analysis having a transition path to Multi-Disciplinary Analysis and Optimization.

Notes:

(1) Proposals supporting other than FAP milestones and/or goals (e.g. ,Non-FAP Users) will be evaluated on a case-by-case basis and require approval of the Director, Fundamental Aeronautics Program, prior to evaluation by the RTJones Board.

(2) Code development within FAP should be, at a minimum, loosely connected to a FAP milestone and/or goal in that it will improve the potential of achieving that milestone/goal or enhance results associated with that milestone/goal.

(3) CPU Allocation: Users can use the command "acct_query –crtjones" to determine how much of the allocation has been used and how much is remaining. Plans are in the works for tools to notify users that they are nearing their allocation limit. Additional CPU hours, above the original allocated amount, will not be provided automatically. Requests for additional time should be sent to: rtjreqst@nas.nasa.gov and should include a reference to the original proposal file name. Additional time is not guaranteed; the decision will be made based on time available on RTJones and the specific support the job is providing to the Fundamental Aeronautics Program. The decision will be made solely by the RTJones Board.

(4) Classification of data: Understanding the importance of a complete risk analysis (NASA Procedures and Guidelines, NPG: 2810.1), it is essential to identify the criticality of data to ensure timeliness of supporting the needs of the Center should a catastrophe occur. Note that NAS systems are only authorize to support the low and moderate categories.

- The potential impact is **low** if— The loss of confidentiality, integrity, or availability could be expected to have a limited adverse effect on organizational operations, organizational assets, or individuals. A limited adverse effect means that, for example, the loss of confidentiality, integrity, or availability might: (i) cause a degradation in mission capability to an extent and duration that the organization is able to perform its primary functions, but the effectiveness of the functions is noticeably reduced; (ii) result in minor damage to organizational assets; (iii) result in minor financial loss; or (iv) result in minor harm to individuals.
- The potential impact is **moderate** if—The loss of confidentiality, integrity, or availability could be expected to have a serious adverse effect on organizational operations, organizational assets, or individuals. A serious adverse effect means that, for example, the loss of confidentiality, integrity, or availability might: (i) cause a significant degradation in mission capability to an extent and duration that the organization is able to perform its primary functions, but the effectiveness of the functions is significantly reduced; (ii) result in significant damage to organizational assets; (iii) result in significant financial loss; or (iv) result in significant harm to individuals that does not involve loss of life or serious life threatening injuries.
- The potential impact is **high** if— The loss of confidentiality, integrity, or availability could be expected to have a severe or catastrophic adverse effect on organizational operations, organizational assets, or individuals. A severe or catastrophic adverse effect means that, for example, the loss of confidentiality, integrity, or availability might: (i) cause a severe degradation in or loss of mission capability to an extent and duration that the organization is not able to perform one or more of its primary functions; (ii) result in major damage to organizational assets; (iii) result in major financial loss; or (iv) result in severe or catastrophic harm to individuals involving loss of life or serious life threatening injuries.
- EAR: Export Administration Regulations
- ITAR: International Traffic in Arms Regulations
- Proprietary
- SBU: Sensitive But Unclassified